# M4N78 PRO

## Brand New Design Optimized for AM3 CPU

- O.C. DDR2 1200
- AMD AM3 CPU support
- EPU
- TurboV
- Turbo Key
- ASUS Anti-Surge Protection
- AMD 140W CPU Support

## CPU, Chipset and Graphics Features

### AMD® Phenom™ II/Athlon™ X4/Athlon™ X3/ Athlon™ X2 (AM3 CPU)

This motherboard supports AMD® AM3 multi-core processors with unique L3 cache and delivers better overclocking capabilities with less power consumption. It features dual-channel DDR2 1066 memory support and accelerates data transfer rate up to 5200MT/s via HyperTransport™ 3.0 based system bus. This motherboard also supports AMD® CPUs in the new 45nm manufacturing process.

### AMD® Phenom™ X4/ Phenom™ X3 / Athlon™ X2/ Athlon™/ Sempron™ processors (socket AM2+/AM2)

This motherboard supports AMD® Socket AM2+ multi-core processors. It features dual-channel DDR2 1066 memory support, data transfer rate up to 5200MT/s via HyperTransport™ 3.0 based system bus, and AMD® Cool ´n´ QuietTM Technology.

### NVIDIA GeForce® 8300

NVIDIA® GeForce 8300 offers the latest support of Hybrid SLI Technology, DirectX® 10 graphics features, HD video playback with HDMI/DVI output. It also supports HyperTransport™ 3.0 interface, PCI Express™ 2.0 bus architecture, Serial ATA 3 Gb/s devices and is optimized with AMD's latest AM3/AM2+ and multi-core CPUs to provide excellent system performance.

### HyperTransport 3.0

HyperTransport™ 3.0 technology provides 2.6 times more bandwidth than HyperTransport™ 1.0, radically improving system efficiency to create a smoother, faster computing environment.

### O.C. DDR2 1200

To attain top performance, ASUS engineers have successfully unleashed DDR2 1200(O.C.) MHz to meet the higher bandwidth requirements of the latest operation system, 3D graphics, multimedia, and Internet applications.

### HDMI Support

**Enjoy Full HD 1080p Multimedia Home-Theater Entertainment**

High-Definition Multimedia Interface (HDMI) is a set of digital video standards that delivers multi-channel audio and uncompressed digital video for full HD 1080p visuals through through a single cable. Supporting HDCP copy protection such as HD DVD and Blu-ray Discs, HDMI provides you with the highest-quality home theater experience.

*Ensure that you download and update to the latest BIOS at www.asus.com and purchase the memory modules listed in the ASUS official memory Qualified Vendors Lists (QVL).

** We recommend that you install the DDR2 1200 memory modules on the yellow slots for better performance.

### PCIe 2.0 support

This motherboard supports the latest PCIe 2.0 devices for double speed and bandwidth which enhances system performance.

### Hybrid SLI Support

**GeForce® Boost**
**Boosted Performance with Onboard GPU and Discrete Graphics Card HybridPower™**
**Intelligent Graphics Power-Savings and Quiet Operations**
Hybrid SLI™ technology is a unique hybrid multi-GPU technology. It includes two primary features: GeForece Boost and HybridPower™. GeForece Boost turbo-charges performance of discrete graphics cards when combined with the motherboard GPUs. HybridPower™ unleashes graphics performance for demanding 3D applications and enables low-power operation for everyday computing needs.
* GeForce®(R) Boost and HybridPower™ are on select GeForce®(R) GPUs. Visit www.nvidia.com/hybridsli for more information.

### HDMI/DVI/RGB Support

**Flexible Graphics Alternatives**
This motherboard supports multiple digital and analog display output interfaces - HDMI, DVI, and D-Sub. With such diversity of display outputs, you are able to choose and upgrade display devices freely.

## ASUS Power Solutions

### 4+1 Phase Power Design

**Longer Life & Higher Efficiency!**
Unleashes ultimate memory performances with independent power to core components, while providing fast transient response and stability for the CPU under heavy loading or overclocking modes.

### ASUS Anti-Surge Protection

This special design prevents expensive devices and the motherboard from damage caused by power surges.

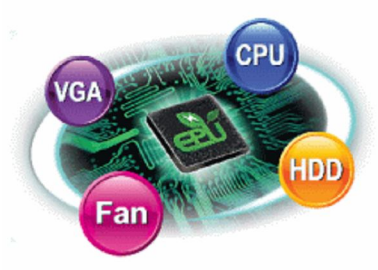
## ASUS Green Design

### EPU

The ASUS EPU (Energy Processing Unit) provides total system power management by detecting current PC loadings and intelligently moderating power in real-time. It automatically provides the most appropriate power usage for the CPU, VGA card, hard drives, and CPU/chassis fans- helping save power and money!
*ASUS EPU is supported by AM2+/AM3 CPU only.

### AI Nap

**Minimize noise and power consumption when temporarily away!**
With AI Nap, the system can continue running at minimum power and noise when you are temporarily away. To wake the system and return to the OS environment, simply click the mouse or press a key.




## ASUS Overclocking Tools

### TurboV

Feel the adrenaline rush of real-time O.C. - now a reality with the ASUS TurboV. This easy O.C. tool allows you to overclock without exiting or rebooting the OS; and its user-friendly interface makes overclock with just a few clicks away. Moreover, the ASUS OC profiles in TurboV provides the best O.C. settings in different scenarios.

### Turbo Key

ASUS Turbo Key allows the user to turn the PC power button into an overclocking button. After the easy setup, Turbo Key can boost performances without interrupting ongoing work or games - with just one touch!!

## Express Gate

### Express Gate

**Instant Online! Instant Fun!**

Taking only 5 seconds to bootup, Express Gate is the one-stop gateway to instant fun! It´s a unique motherboard built-in OS. You can utilize the most popular Instant Messengers (IM) like MSN, Skype, Google talk, QQ, and Yahoo! Messenger to keep in touch with friends, or quickly check on the weather and e-mails just before leaving your house. What´s more, the user-friendly picture manager lets you view your pictures without entering Windows at anytime! * The actual boot time is subject to hardware configurations and product models.

## Industry Standard

### High Definition Audio

**Enjoy high-end sound system on your PC!**
The onboard 8-channel HD audio (High Definition Audio, previously codenamed Azalia) CODEC enables high-quality 192KHz/24-bit audio output, jack-sensing feature, retasking functions and multi-streaming technology that simultaneously sends different audio streams to different destinations. You can now talk to your partners on the headphone while playing a multi-channel network games. All of these are done on one computer.

### S/PDIF-out on Back I/O Port

This motherboard provides convenient connectivity to external home theater audio systems via coaxial and optical S/PDIF-out (SONY-PHILIPS Digital Interface) jacks. It allows to transfer digital audio without converting to analog format and keeps the best signal quality.

## ASUS EZ DIY

### Q-Connector

ASUS Q-Connector allows you to easily connect or disconnect the chassis front panel cables to the motherboard. This unique module eliminates the trouble of connecting the system panel cables one at a time and avoiding wrong cable connections

### CrashFree BIOS 2

This feature allows you to restore the original BIOS data from the support CD in case when the BIOS codes and the data are corrupted. This protection eliminates the need to buy a replacement ROM chip.

### ASUS EZ Flash2

With ASUS EZ Flash, you can update BIOS before entering operating system. No more DOS-based flash utility and bootable diskette required.

### O.C. Profile

**Conveniently store or load multiple BIOS settings**
Freely share and distribute favorite overclocking settings The motherboard features the ASUS O.C. Profile that allows users to conveniently store or load multiple BIOS settings. The BIOS settings can be stored in the CMOS or a separate file, giving users freedom to share and distribute their favorite overclocking settings.

## ASUS Quiet Thermal Solutions

### ASUS Q-Fan 2

ASUS Q-Fan2 technology intelligently adjusts both CPU fan and chassis fan speeds according to system loading to ensure quiet, cool and efficient operation.

### Stylish Heatsink

The streamline-shaped heatsink features 0-dB thermal solution that offers users a noiseless PC environment. Not only the beautifully curved fins upgrade the visual enjoyment for motherboard users, but also the special Streamline Airflow Guiding design lowers the temperature of the north bridge chipset through high efficient heat-exchange. Combined with usability and aesthetics, the ASUS streamline-shaped heat-sink will give users

## Other ASUS Features

### Uses 100% All High-quality Conductive Polymer Capacitors!(VRM 5000hrs lifespan @105°C, 500,000hrs @65°C)

This motherboard uses all high-quality conductive polymer capacitors onboard for durability, improved lifespan, and enhanced thermal capacity.

### C.P.R.(CPU Parameter Recall)

When the system hangs due to overclocking failure, there is no need to open the case to clear CMOS data. Just simply restart the system, the BIOS would show the previous setting and then users can amend the CPU setting again.

an extremely silent and cooling experience with the elegant appearance!

### MyLogo2

Personalize your system with customizable boot logo You can convert your favorite photo into a 256-color boot logo for a more colorful and vivid image on your screen.

## RoHS

### GreenASUS

The motherboard and its packaging comply with the European Union´s Restriction on the use of Hazardous Substances (RoHS). This is in line with the ASUS vision of creating environment-friendly and recyclable products and packaging to safeguard consumers´ health while minimizing the impact on the environment.

Back Panel I/O Ports

# Specifications

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|---|---|
| CPU | AMD AM3/AM2+/AM2 ;Phenom™II/Athlon™II/Phenom™/Athlon™/Sempron™ Processors<br>AMD 140W CPU Support<br>AMD Cool 'n' Quiet™ Technology<br>Support 45nm CPU |
| Chipset | NVIDIA GeForce 8300 |
| System Bus | Up to 5200 MT/s HyperTransport™ 3.0 interface for AM3/AM2+ CPU<br>2000 / 1600 MT/s for AM2 CPU |
| Memory | 4 x DIMM, Max. 16 GB, DDR2 1200(O.C.)/1066*/800/667 ECC,Non-ECC,Un-buffered Memory<br>Dual Channel memory architecture<br>*Due to AMD CPU limitation, DDR2 1066 is supported by AM2+/AM3 CPU for one DIMM per channel only. Refer to www.asus.com for the memory QVL (Qualified Vendors Lists).<br>**Due to OS limitation, when installing total memory of 4GB capacity or more, Windows® 32-bit operation system may only recognize less than 3GB. Hence, a total installed memory of less than 3GB is recommended. |
| Expansion Slots | 1 x PCIe 2.0 x16<br>2 x PCIe x1<br>3 x PCI 2.2 |
| VGA | Integrated NVIDIA® GeForce® 8 series GPU<br>Hybrid SLI™ Support (supports Windows Vista only)<br>Supports HDMI™ Technology with max. resolution up to 1920 x 1200<br>Supports DVI with max. resolution up to 1920 × 1200 @ 60 Hz<br>Supports D-Sub with max. resolution up to 1920 × 1440 @ 75 Hz<br>HDMI/DVI/RGB Support |

| | |
|---|---|
| | Supports Microsoft® DirectX 10, OpenGL 2.0, Pixel Shader 4.0<br>Support PCIe 2.0 / 1.0 Architecture |
| Storage | **NVIDIA® GeForce 8300**<br>1 xUltraDMA 133/100<br>6 xSATA 3 Gb/s ports<br>(Legacy IDE operation is only supported on drives 1–4.)<br>NVIDIA® MediaShield™ Support RAID 0,1,0+1,5,JBOD |
| LAN | NVIDIA Gigabit MAC<br>Gigabit LAN controller featuring AI NET 2 |
| Audio | VIA1708S 8 -Channel High Definition Audio CODEC<br>DTS Surround Sensation UltraPC<br>- Supports Jack-Detection, Multi-Streaming, and Front Panel Jack-Retasking<br>- Optical S/PDIF Out ports at back I/O<br>- ASUS Noise Filtering |
| USB | 12 xUSB 2.0 ports (8 ports at mid-board, 4 ports at back panel) |
| ASUS Unique Features | **ASUS Power Solutions**<br>- 4+1 Phase Power Design<br>- ASUS Anti-Surge Protection<br>**ASUS Green Design:**<br>- ASUS EPU<br>*ASUS EPU is supported by AM2+/AM3 CPU only.<br>- ASUS AI Nap<br>**Express Gate**<br>**ASUS Quiet Thermal Solution**<br>- ASUS Fanless Design: Stylish heatsink solution<br>- ASUS Q-Fan2<br>**ASUS Crystal Sound**<br>- ASUS Noise Filtering<br>**ASUS EZ DIY**<br>- ASUS Q-Connector<br>- ASUS CrashFree BIOS 2<br>- ASUS O.C. Profile<br>- ASUS EZ Flash 2 |
| Overclocking Features | **Intelligent overclocking tools**<br>- AI Overclocking (Intelligent CPU Frequency Tuner)<br>- ASUS TurboV<br>- ASUS Turbo Key<br>**Precision Tweaker**<br>- vDIMM: 8 -step DRAM voltage control<br>- vChipset 4-step Chipset voltage control<br>- vCore: Adjustable CPU voltage at 50mV increment<br>**SFS (Stepless Frequency Selection)**<br>- FSB tuning from 200MHz up to 600MHz at 2MHz increment<br>- PCI Express frequency tuning from 100MHz up to 200MHz at 1MHz increment<br>**Overclocking Protection**<br>- ASUS C.P.R.(CPU Parameter Recall) |
| Special Features | 100% All High-quality Conductive Polymer Capacitors! (VRM 5000hrs lifespan @105°C, 500,000hrs @65°C)<br>ASUS MyLogo 2 |
| Back Panel I/O Ports | 1 x DVI<br>1 x D-Sub<br>1 x PS/2 Keyboard<br>1 x HDMI<br>1 x PS/2 Mouse<br>1 x S/PDIF Out (Optical)<br>1 x LAN(RJ45) port<br>4 x USB 2.0/1.1<br>8 -Channel Audio I/O |
| Internal I/O Connectors | 4 x USB connectors (8 ports)<br>1 x Floppy disk drive connector<br>1 x IDE connector<br>6 x SATA connectors<br>1 x CPU Fan connector |

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|---|---|
| | 1 x Chassis Fan connector<br>1 x Power Fan connector<br>Front panel audio connector<br>COM connector<br>Chassis Intrusion connector<br>System Panel (Q-Connector)<br>1 x S/PDIF Out Header<br>CD audio in<br>24-pin ATX Power connector<br>4-pin ATX 12V Power connector |
| BIOS | 8 Mb Flash ROM<br>AMI BIOS, PnP, DMI2.0, WfM2.0, SM BIOS 2.5, ACPI 2.0, ASUS EZ Flash 2 |
| Accessories | 1 x UltraDMA 133/100/66 cable<br>2 x Serial ATA cables<br>I/O Shield<br>User's manual<br>2 in 1 Q-connector (USB, System panel; Retail version only)<br>*The floppy disk drive cable is purchased separately |
| Support Disc | Drivers<br>ASUS PC Probe II<br>Express Gate<br>ASUS AI Suite<br>Anti-virus software (OEM version)<br>ASUS Update |
| Form Factor | ATX Form Factor<br>12 inch x 9.6 inch ( 30.5 cm x 24.4 cm ) |